ABSTRACT OF THE DISCLOSURE

A system and method for efficient transfer and buffering of captured data events. The system includes data capture logic configured to capture data events from a nondeterministic data bus; a system memory including a plurality of addressable locations, where a subset of the plurality of addressable locations is configured as a data event buffer; a DMA transfer engine configured to transfer the captured data events from the data capture logic to a region of the data event buffer as portions of the captured data events become available from the data capture logic; and an application configured to access the data event buffer to process the captured data events without the DMA transfer operation being stopped. In response to the region being filled, the DMA transfer engine may perform the DMA transfer operation to a different region of the data event buffer without the DMA transfer operation being stopped.